

Patent Claims:

1. Milling method for the production of structural components from materials that are difficult to machine by chip-cutting, while producing depressions with at least one sidewall, especially for the production of integral bladed rotors for gas turbines, whereby the depressions especially form flow channels and the sidewalls especially form blade surfaces, whereby a milling tool is moved along at least one defined tool path or milling path for the milling, characterized in that at least one collision contour is defined in addition to the or each tool path, whereby the position or orientation of the milling tool relative to the or each collision contour is monitored, and whereby the position or orientation of the milling tool is changed and/or an error message is generated, if at least one of the collision contours is damaged by the milling tool.

2. Method according to claim 1, characterized in that, and the position or orientation of the milling tool along the or each tool path relative to the structural component to be milled are determined by tool vectors, whereby the tool vectors are defined with cutting advance or lead angles and clearance or pitch angles.

3. Method according to claim 1 or 2, characterized in that, for the milling of depressions that are bounded by two sidewalls, two collision contours are defined, whereby a

first collision contour corresponds to a first sidewall contour and a second collision contour corresponds to a second sidewall contour.

4. Method according to claim 3, characterized in that, when the milling tool damages the collision contour that corresponds to the sidewall that is currently to be milled, the position or orientation of the milling tool is changed in such a manner that the damage of the collision contour is removed.

5. Method according to claim 4, characterized in that for this purpose, the clearance or pitch angle of the tool vector is increased.

6. Method according to one or more of the claims 3 to 5, characterized in that, when the milling tool damages the collision contour that corresponds to the sidewall lying opposite the sidewall that is currently to be milled, an error protocol and/or an error message is generated.

7. Method according to claim 6, characterized in that the error protocol is used for the dimensioning of the milling tool, especially for the determination of the miller diameter.